

ABSTRACT

Educational Attainment in Second Generation Immigrants: Creating Context for Predicting College Graduation

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Educational attainment is a commonly used variable when looking at outcomes of immigration in the United States. This paper contributes to educational and immigrant research in three ways. First, this paper will account for several dimensions of influence when predicting educational attainment. Second, while college graduation will serve as a measure for educational attainment, high school grade point average will also be evaluated as a preceding variable to predicting college graduation. Lastly, a greater investigation of the influence of children's friend groups will be investigated while still accounting for child, school, and parent influences. My hypothesis is that child expectations and efforts as well as parent and outside resources are all important factors in predicting educational attainment. My hypothesis is tested and overall supported using data from the Children of Immigrants Longitudinal Study (CILS).

Educational Attainment in Second Generation Immigrants:
Creating Context for Predicting College Graduation

by

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TABLE OF CONTENTS

List of Tables.....	vi
Acknowledgments.....	vii
Chapter One.....	1
Introduction.....	1
Immigration Theories.....	2
Contemporary Immigration.....	3
Educational Attainment Theories.....	6
Past Research on Educational Attainment.....	9
Educational Attainment Trends in the United States.....	12
Outcomes of Educational Attainment.....	13
Research Question.....	14
Chapter Two.....	17
Materials and Methods	17
Data.....	17
Variables	19
Analyses	28
Chapter Three	30
Results.....	30
College Graduation.....	30
High School GPA.....	32
Friends who Drop Out of High School.....	35

Combined Friend Group Influence.....	37
Completion/Attrition.....	43
Chapter Four.....	46
Discussion and Conclusions.....	46
Limitations.....	49
Future Research	50
References.....	52

LIST OF TABLES

Table 1: Descriptive Statistics for Responses in Regression Models Predicting College Grad and HS GPA.....	27
Table 2: Binary-Logit Regression Predicting College Graduation.....	33
Table 3: OLS Regression Predicting High School GPA	36
Table 4: Chi-Square Distribution Between College Graduation Rates by Friend's College Plans & Drop-out.....	38
Table 5: Difference Between Means in GPA by Friend's College Plans & Drop-out	39
Table 6: Binary-Logit Regression Predicting College Graduation.....	41
Table 7: OLS Regression Predicting High School GPA	42
Table 8: Mean Demographics By Completed and Attrition with CILS	45

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As I am about to argue in my thesis, education is influenced by multiple factors that encompass all aspects of life and social interaction. In this regard my acknowledgment section will fall short of addressing everyone who has influenced me to get to the point of writing a master's thesis. Yet, I am grateful for so many family members, friends, and mentors whether they are listed or not.

CHAPTER ONE

Introduction

Education is commonly referred to as a key to success in life and the structural support to society. While education can come in various forms, standardized education has become the mainstream form of what society has come to think of as education, what employees look for on resumes, and what will hopefully lead to fulfilling idealized dreams of living in the United States. Just as education is a foundational component to society, immigrants are also a large and foundational component to the population of the United States. The present paper looks at important intersections in educational attainment in second generation immigrants in the United States. This paper will add to educational research with the immigrant population in three ways. First, this paper will take a holistic approach to explaining educational attainment by accounting for several different predictors of educational outcomes in one model, such as ethnic, individual, school, friend, and familial differences. Second, college graduation will also be evaluated in context to variables that high school grade point average. Lastly, a greater investigation of the influence of children's friend groups will be investigated while still accounting for other influences.

General trends in social science research have been focusing more on holistic approaches which account for multiple influencing factors at once, rather than making conclusions based on isolated information. This paper aims to further this trend by analyzing by first outlining immigration and education theories, specifically focusing on segmented assimilation and sociocultural models predicting academic achievement

Secondly, this paper will summarize past research on educational attainment in immigrants and educational trends in the United States. Based upon the theoretical support given in the literature review, this paper will quantitatively test how well segmented assimilation and sociocultural models describe the immigrant population by using the Children of Immigrants Longitudinal Study (CILS) to conduct a binary-logit regression predicting college graduation and an OLS regression predicting high school GPA. Lastly, results from this paper will be discussed in relation to its contribution and place within the broader literature of education and immigration.

Immigration Theories

As first documented by J. H. St. John Crevècoeur in 1782, United States is commonly referred to as a melting pot to describe the diverse yet cohesive society in America. Although this metaphor is a witty way to see describe how America has been created and sustained by immigrants, it largely underscores the complexity of accurately describing the realities that many contemporary immigrants face once arriving in the United States. While immigrants may share some commonalities, they are still distinct individuals with varying backgrounds and aspirations.

Just as one metaphor does not accurately reflect an immigrant nation, sociologists' have long debated on how to evaluate immigrants' adjustment process to the host country and its culture. Historically, immigration has been studied in terms of assimilation and acculturation. Immigrant assimilation can be a controversial issue. For example, is it ethical to pressure immigrants to discard their native culture and adapt to the host culture? Consequently, assimilation theories have been criticized for taking an

ethnocentric and patronizing approach to interpreting immigrant status (Myrdal, 1944; Warner & Srole, 1945; Milton, 1964; Alba & Nee, 2003).

Contemporary Immigration

A reexamination of the sociological approach to studying immigration in the United States has distinguished historical versus contemporary views of assimilation, as well as exploring other forms of immigrant adaptation and acculturation in the United States. The Immigration Act of 1965 is one of the most distinguishing factors to categorize between historical and contemporary assimilation models in the U.S. With this act, there were large changes in immigration law and the demographic makeup of incoming immigrants (Alba & Nee, 2003; Portes & Rumbaut, 2006). Although modifications have been made in interpreting contemporary immigration from historical models, social scientists still acknowledge the delicate subject on how to interpret and promote immigrant assimilation into the larger mainstream culture. Thus, contemporary immigration is still concerned with the well-being and transition of immigrants into a new host country, but focuses less on comparing their adjustment to any one specific people group. This paper will draw upon segmented assimilation, a common contemporary immigration model, for theoretical support when comparing educational outcomes in immigrants.

Segmented Assimilation

Segmented assimilation models various outcomes of immigrants, such as educational attainment, economic stability, and language ability. Differences in outcomes are based on their resources and experiences, specifically focusing on intergenerational changes (Portes & Rumbaut, 2001). Assimilation outcomes are

described in either an upward or downward pattern. Determinants to whether an immigrant may experience either upward or downward assimilation are based on background factors, international patterns and whether the second generation (or later) immigrant experiences external challenges. Another way to summarize the key mechanisms used in segmented assimilation is parental human capital, family situation, and modes of incorporation into the larger society (Portes, Fernández-Kelly, & Haller, 2005; Zhou, Lee, Vallejo, Tafoya-Estrada, & Xiong, 2008). Therefore, the collective amount of resources immigrants have will tend to direct them in either an upward or downward direction in the assimilation process. Using education as one factor, higher levels of education should direct immigrants toward upward assimilation.

For example, background factors include human capital of the first generation immigrant (i.e. education level, English ability, etcetera). Additionally, the amount of family and community resources is also taken into account. In this model, higher amounts of human, social, and cultural capital should lead to upward assimilation. Examples of external challenges can be instances of racial discrimination, access into a labor market, and inner-city subcultures.

While modes of incorporation are based on more than just national origin identity, national origin identity differences do exist in United States. For instance, immigrants from China tend to have strong levels of parental human capital, come from two-parent households, hold high educational expectations, and prioritize education investments. In comparison, immigrants from Vietnam typically have come to the United States with lower levels of human capital, but have strong family support and warm receptions into society. A third comparison is Mexican immigrants, who tend to have low levels of

human capital, weak family support, and less focus on educational attainment (Goyette & Conchas, 2002; Zhou et al., 2008). It is important to not assume that immigrants from a certain country will conform to these national origin trends, but these trends provide insight that immigrants come to the United States with a wide variety cultural contexts and resources.

For clarity and simplicity segmented assimilation is usually categorized as either upward or downward assimilation; however, the process of assimilation and acculturation may be better described on a continuum. Immigrants may adopt or integrate certain practices of the host culture and their immigrant culture. For example, selective acculturation is where both the host and immigrant culture is retained (e.g. full bilingualism). Portes and Rumbaut (2001) argue that selective acculturation provides the most stability, retention of parental authority, and less risk to external discrimination. As mentioned before, segmented assimilation accounts for the collective amount of resources. Even if an immigrant has rather low levels of resources in other areas, having a high level of education can help with a successful adjustment to the host country. With respect to the focus of this paper, whether segmented assimilation is measured categorically or on a continuum, differences in lived-out immigrant experiences can translate to different educational outcomes.

As already stated, the extent to which immigrants should conform to the host culture is debated, but there is a general consensus that higher educational attainment is beneficial and can allow for upward assimilation. Segmented assimilation provides a broad context of how pre-existing resources available to immigrants can influence the likelihood of educational attainment and upward assimilation. Additionally, segmented

assimilation provides a broad context of how education itself can help upward assimilation. In the following section, a summary of education theories will further specify which mechanisms have been identified as key variable in predicting educational attainment.

Educational Attainment Theories

Just as immigrant assimilation has been criticized for prejudicial assumptions, theories that explain educational attainment differences among different ethnic groups have a controversial history. For example, the heredity theory implies that differences in educational attainment are due to genetic differences by race that influence conceptual thinking, problem-solving abilities, and abstract thinking (Jensen, 1969). In contrast, structural theories suggest that differences in educational attainment by race and class are due to societal stratification and discrimination (Bowles & Gintis, 1976). While past educational attainment models have suffered from ethnocentric biases using the Anglo standard, contemporary educational attainment models tend to aim for more neutral and holistic interpretations.

Sociocultural Interactive Model

Yongsook Lee (1991) argues that past theories explaining educational attainment need to take a more holistic approach, citing that educational achievement of a minority group can only be understood when the interrelated factors of the host society, cultural background, historical context, and interaction among children, parents, teachers and peer groups are taken into account.¹ Lee (1991) identifies thirteen processes that factor into

¹ Lee (1991) acknowledges work from Lee, Y. 1984. "A Comparative Study of East Asian and Anglo American Academic Achievement: An Ethnographic Study."

academic achievement for a minority group. As directly taken from Lee's (1991)

sociocultural interactive model, these include:

- (1) A minority group's educational values affect parents' educational expectations for their children.
- (2) The educational expectations of minority group parents are affected by income distribution (i.e., their ability to pay for children's education) and their perception of economic return from education for their group.
- (3) Teachers' educational expectations for children of certain minority groups are affected by their perception of economic return from education for the minority group (i.e., expected job opportunities) and individual children's ability to pay for their education (i.e., parent's socioeconomic status).
- (4) Teachers' and parents' educational expectations of students are interrelated.
- (5) Children's perceptions of parents' educational expectations affect their self-expectations.
- (6) Children's perceptions of teachers' expectations of their educational achievement affect their self-expectations of educational achievement.
- (7) Teachers' educational expectations of certain groups of children affect their peer group expectations of those children.
- (8) Peer groups' educational expectations affect children's self-expectations of educational achievement.
- (9) The value placed on industriousness affects parents' standard for their children's use of time. The closeness of the family and the authority of minority group parents affect the ability of the parents to control their children's behavior.
- (10) Parents' ability to control children's behavior affects children's study habits.
- (11) Teacher backgrounds, teaching goals, teaching methods and disciplinary practices affect children's study habits.
- (12) Peer group's classroom behavior affects children's study habits.
- (13) Children's educational self-expectations and study habits lead to their actual academic achievement. (136)

Dissertation. Evanston, IL: Northwestern University and Slaughter, D., & Schneider, B.L., 1982. "Newcomers: Blacks in Private Schools." Proposal to the National Institute of Education, Washington, D.C. in synthesizing her sociocultural interactive model.

Lee's (1991) model can more broadly be explained in terms of an ecological systems approach, where human development can be explained using factors that range from a macro level to an individual level (Bronfenbrenner, 1979). This sociocultural model will be used in this paper to determine variables of interest to include in an educational attainment regression model. Sociocultural variables used in this paper's models are categorized into cultural characteristics (ethnicity), socioeconomic status, children's measures, school experiences, friend influences, and family influences. Children's measures are further divided into measures of their educational expectations, English proficiency, and hours spent on studying. The effects of school experiences evaluate the influence of attending an inner-city school and teacher quality. With regards to friend influences, this will be measured by the effect of friends' plans to go to college and friends who have dropped out of high school. Lastly, the effect of family will be evaluated by level of involvements, rules, parent expectations, presence of an intact family, and whether the parents have saved any money for children's education after high school.

Segmented assimilation theory and the sociocultural interactive model are complimentary theories. Segmented assimilation explains acculturation and outcomes in broad terms, and can be used to explain educational, economic, and social outcomes. Lee's (1991) sociocultural interactive model is an acculturation model specific to educational outcomes. Therefore, the sociocultural interactive model will be used in this current paper as a basis for identifying variables of interest in creating regression models that predict educational attainment, while segmented assimilation theory helps put the results into a larger context of immigrant experience in the United States.

Past Research on Educational Attainment

Theories and research in educational outcomes support that educational achievement is influenced by the context of children's experiences. Parents, teachers, friends, and other factors all can influence children's motivation, engagement, and achievement in school (Ryan, 2000). While many factors affect educational attainment, both socioeconomic status (SES) of the family and high school GPA of the student have been well documented as two very strong predictors of educational attainment (Blackburn, 2007; Haller, Portes, & Lynch, 2011; Pong, Hao, & Gardner, 2005; Portes & Rumbaut, 2005).

Other variables, such as ethnicity, peer group influences, quality of education, and familial resources have also been documented to influence educational attainment. In the context of minority status, past research has also found differences among ethnic and nationality groups in predicting educational attainment, even after controlling for demographic and standard education variables (Portes & Rumbaut, 2005). For example, Feliciano (2006) used data from the CILS and the United Nations Educational, Scientific, and Cultural Organization to find out that pre-migration educational status of the respondents' national origin at the group level, rather than at the individual level, significantly predicted respondents' educational expectations. Using Lee's (1991) sociocultural interactive model, high educational attainment in Korean children is in part explained because their parents tend to have high expectations and standards for their children. In Korean families, educational attainment is commonly viewed as a means for self-improvement, family honor, occupational opportunity, and successful parental control over children's time.

Yet, ethnicity differences alone do not provide a satisfactory answer to educational attainment differences. For example, using the Youth Adaptation and Growth Questionnaire, Portes (1999) found that differences among ethnicity did remain significant in predicting school achievement, but concludes this difference explained only a small amount of the variance. Rather, Portes (1999) suggests that more emphasis on key demographic variables, such as grade level, English proficiency, SES, and attendance at an inner-city school may better explain educational attainment differences. These demographic variables will be included in this analysis, as well as several other variables that have been identified as factors of educational attainment.

With regards to peer group influence, children's educational achievement can be influenced by their peers through transmission of information, modeling behavior, and reinforcement of peer norms and values (Ryan, 2000). For example, students' peer group context and friend group similarity have been linked to children's value of education, GPA, and overall school achievement (Berndt & Keefe, 1995; Cohen, 1977; Epstein, Goyette, & Conchas, 2002; Ide, Parkerson, Haertel, & Walberg, 1981; Ryan, 2001). For example, Ryan's (2001) study looked at middle school students and found that students' peer groups influenced children's value of school education and achievement in school. However, these students' peer groups did not influence how the children viewed the utility and importance of school. Ryan (2001) suggests that parents and teachers may be more influential in conveying the importance of education than friends. This paper will help address Ryan's (2001) prediction that several groups can influence a child's educational achievement in varying ways.

Quality and quantity of learning environments have also been documented as important factors in educational outcomes (e.g. Darling-Hammond, 1999; Heyneman & Loxley, 1983; Murnane, 1975; Rice, 2003). For example, school resources and the environment of the school, such as inner-city schooling, have been linked to student performances (Heyneman & Loxley, 1983; Murnane, 1975). Also, teachers' preparation, certification, ongoing development, and ability is associated with outcomes in student performance (Darling-Hammond, 1999; Rice, 2003).

Familial resources are key variables of interest in children's educational development. For example, parental monitoring and involvement are associated with positive educational outcomes (Izzo, Weissberg, Kaspro, & Fendrich, 1999). Specifically looking at minority groups, Pong et al. (2005) found that while parents talking to their children about school experiences and parental involvement did not sufficiently explain educational achievement differences across generations, it was a significant predictor of adolescents' GPA. .

However, parental influences on immigrant children's educational outcomes are not largely studied due to limitations of collecting multi-generational data. Moreover, not all research using immigrant samples have found variables that address parenting styles to have statistical significance in predicting educational outcomes. For example, Serdarevic (2008) uses primary path analysis with the CILS dataset to look at the relationships between parents' migration, adjustment experiences, parenting behavior, and their influences on adolescent psychological and educational outcomes. Serdarevic (2008) found that immigrant parents' engagement did not mediate educational outcomes of adolescents, as defined by academic expectations and aspirations. One specific

contribution that this paper adds to the already existing education literature is to account for the multiple factors that can influence children's educational attainment, including family resources.

Educational Attainment Trends in the United States

As a general trend, educational attainment has been rising over time in the United States. As of March 2011, 30.4% of the U.S. population age 25 and older had completed a bachelor's degree or higher as compared to 25.6% in March 2000. When looking education level by race, 34.0% of whites age 25 older that have completed a bachelor's degree or higher as of March 2011 as compared to 20.2% of Blacks, 14.1% of Hispanics, and 50.8% of Asians (Digest of Education Statistics, 2011). Overall, Hispanics tend to fall below the national average in educational attainment while Asians are above the national average in educational attainment.

By race/ethnicity, the percentage of degrees conferred in the U.S. from 2009 to 2010 are as follows (in parenthesis is the estimated residential population percentage distribution in 2010): 70.8% white (63.8%), 10.0% black (12.3%), 8.5% Hispanic (16.4%), 7.1% Asian/Pacific Islander (4.8% for Asian, 0.2% for Pacific Islander), 0.8% American/Indian/Alaska Native (0.7%), and 2.9% non-resident alien (Digest of Education Statistics, 2011).

Even with a national trend of increasing educational attainment, researchers such as Bowen, Chingos, and McPherson (2009) argue that the educational attainment in the United States is lower than acceptable, especially in comparison to the world. Moreover, disparities in educational attainment by race and ethnicity are predicted to increase,

unless there are greater interventions to promote and support educational attainment with minority groups (Bowen et al., 2009).

Segmented assimilation theory is one way to explain educational attainment disparities in the immigrant population. Using data from the Children of Immigrants Longitudinal Study, Alejandro Portes and Patricia Fernández-Kelly (2008) found that the majority of their respondents (second-generation immigrants) are “progressing educationally and occupationally, but a significant minority is left behind” (12). They explain that this left behind group tends to result from low levels of parental human capital and community support and weak family structures (Portes & Fernández-Kelly, 2008).

Outcomes of Educational Attainment

Unemployment levels are usually lower for those with higher educational attainment. For example, the 2010 unemployment rate in the United States (persons 25 to 64 years old) for people with a bachelor’s degree or higher was 5.0% as compared to 11.7% for those who completed high school and 16.6% with those who did not complete a high school education (Digest of Education Statistics, 2011).

Adults with higher levels of education tend to have greater earnings. In 2010, the median annual earning of a year-round, full-time, male worker in the U.S., age 25 and older, with a bachelor’s degree or higher was \$71,780 as compared to a high school graduate who made \$40,060 or someone with some high school who made \$29,440. Similar to males, earnings are higher among females with higher levels of education. In 2010, the median annual earning of a year-round, full-time, female worker, age 25 and older, with a bachelor’s degree or higher was \$51,940 as compared to a high school

graduate who made \$29,860 or someone with some high school who made \$20,880 (Digest of Education Statistics, 2011). While it is outside of the scope of this paper to compare differences between gender, the preceding earning statistics are divided up by gender due to large earning differences typically experienced by gender. Nevertheless, the more important point for this paper is that higher levels of education correspond to higher earnings. While economic benefits are key indicators that support the importance educational attainment, it is not to say that educational attainment is limited to economic benefits.

Again, segmented assimilation explains educational attainment in terms of upward or downward assimilation. Higher levels of educational attainment tend to correspond with higher levels of human capital, economic gains, and an overall movement toward upward assimilation.

However, it is important to note that educational attainment does not automatically translate into an easy transition to the United States or economic stability. For example, college education has been shown to provide lower economic returns for certain immigrants, such as those from Mexico and Nicaragua, while college education is a strong predictor for increased income for immigrants groups such as those from Cuba and Vietnam (Portes & Rumbaut, 2001).

Research Question

This paper has three main goals. The first is to look at variables that predict the college graduation of second generation immigrants when accounting for child, teacher, friend, and parent variables. My hypothesis is that college graduation is influenced by children's characteristics, as well as teacher, friend, and parent relationships. The second

goal is to further look at preceding influences of key variables that are used in predicting college graduation, more precisely high school grade point average. My hypothesis is that variables that may not be significant in predicting college graduation will be significant in predicting high school GPA. My third goal is to further analyze friend influence and the impact of having friends who have college plans versus having friends who have drop out of high school. This third goal developed after I conducted my initial regression models predicting college graduation and high school GPA. I wanted to further explore the role competing friend groups had in predicting educational attainment. In general, my hypothesis is that both segmented theory and the sociocultural interactive model, which states there are multiple influencing factors which predict educational attainment, will be further supported by this paper's results. These influencing factors include: children's expectations and efforts, friends, school and teacher quality, and parental resources.

Overall, educational outcomes have been widely researched. However, less research has been conducted studying immigrant groups and including measures of how parental and familial influence affects children's educational attainment (Berry, Phinney, Sam, & Vedder, 2006; Serdarevic, 2008). Portes and Hao (2002) describe the usefulness of the CILS and its contribution to immigrant research. For example, the CILS is the first in-depth study specifically looking at contemporary immigration that includes adequate measures to identify children of immigrants and classify respondents into nationality groups, not just pan-ethnic categories. This paper aims to contribute further to this research by approaching this topic with data from both the second generation immigrants and the parents. For example, parental expectations and practices, friend and teacher

resources, and the children's educational expectations and efforts will all be considered when looking at determinants of educational outcomes. As already summarized in the literature review, past research using the CILS dataset has identified several key variables predicting educational outcomes, but has not included multiple areas of influences when predicting college graduation and high school GPA in a single multivariate analysis. Moreover, I will demonstrate that educational attainment as defined by college graduation can be understood more fully when taking into account variables that influence high school GPA.

My third goal of looking at differences between having friends with college plans and friends who drop out of high school will help contribute to relatively unexplored research on outcomes of competing friend groups (Ryan, 2000). For example, will the presence or absence of positive influences (friends who have college plans) and of negative influences (friends who have drop out of high school) be a stronger predictor of college graduation and high school GPA?

CHAPTER TWO

Materials and Methods

Data

This paper used data from the CILS, a three-wave study conducted between 1992 and 2003 of second generation immigrants and a supplemental parental interview. According to the CILS definition, second generation immigrants are classified as “children born in the U.S. with at least 1 foreign born parent or children born abroad who had entered in the U.S. by age 5”.

The first wave was conducted in 1992 when the children were in the eighth and ninth grade. A total of 5,262 respondents were part of the first survey. Thirty-eight respondents identified their nationality as from the Middle East or Africa, and 88 respondents identified their nationality as from Europe or Canada. Due to the low number of respondents in each of these nationality categories, these respondents were not included in this study. The second wave was conducted in 1995, when respondents were anticipated to graduate from high school. The second wave included 4,199 respondents (not including those from the Middle East, Africa, Europe or Canada), with an attrition rate of 18.2%. At this time a total of 2,442 parental interviews were conducted. In comparison to the children who completed wave one, 46.8% of the respondents’ parents completed the parental interview. Lastly, the third wave was conducted during 2001-2003, when the respondents were emerging into early adulthood. The third wave had 3,253 completed interviews (not including those from the Middle East, Africa, Europe or Canada), with an attrition rate of 36.7%. For this paper, 1,485 respondents were used.

Between the 3,253 respondents who completed wave three and who had a corresponding, completed parent interview, the number of valid cases was reduced to 1,718. The difference between the 1,718 cases with wave three and the parent interview completed and the 1,485 respondents (233 fewer cases) used in this paper is due to missing variables that are used in the regression models.¹ The attrition rates for the CILS were similar or lower than other longitudinal research in the United States (Portes & Rumbaut, 2005).

With the CILS being a multiple-way study, wave one established a baseline of demographic and educational measures. Waves two and three measured adaptation, change, and outcomes at early adulthood.

Initially respondents were chosen at both public and private schools in Miami, Florida, Fort Lauderdale, Florida, and San Diego, California. During wave one and wave two, the majority of the surveys were conducted in the school attended by the respondents. For wave three, the majority of the respondents were contacted at their work or residence, with mailed surveys being the primary method. Completed surveys from wave three came from more than 30 different states and overseas military bases.

This data set was structured to quantitatively test the validity of segmented assimilation theory. As stated by Portes and Fernández-Kelly (2008: 21), “This is the most tangible evidence of segmented assimilation in the second generation available to date. It shows the durable effects of family and contextual characteristics as they create

¹There were 37 missing cases for college graduate, 1 missing cases for age, 60 missing cases for child expectations, 58 missing cases for English proficiency, 67 missing cases for hours of study, 22 missing cases for high school GPA, 85 missing cases for teacher quality, 66 missing cases for friends college plans, 61 missing cases for friends drop-out, 70 missing cases for homework help, 22 missing cases of parent involvement, 14 missing cases for parent rules, 18 missing cases for parent expectations, 65 missing cases of intact family, and 47 missing cases of save money.

paths of advantage and disadvantage among children of immigrants”. This survey was specifically useful for the present study because it included responses from both the children and parents. Despite the usefulness of the CILS, a major concern was attrition rates over the years, particularly the low response rates with the parental interviews. To qualify the results of college attainment and high school grade point average, comparisons between key demographic and educational variables will be made between those respondents who did not complete all waves and those who remained throughout all waves of the survey. Refer to Portes and Rumbaut (2005) and Portes and Rumbaut (2012) for a more detailed description of methodology and summary of the CILS.

Variables

Variables of interest for this paper encompassed multiple focuses, which included predicting college graduation, high school GPA, and differences in responses by attrition and completion. Refer to Table 1 to review descriptive statistics of demographic and key educational variables of the 1,485 cases included in this study.

Demographic

One of the demographic variables used in the following models was gender (male = 1 and female = 0). Close to half the respondents included in the model were male (47.00%). The age reported at wave one ranged from 12 to 18 years old. The average age was 14.11 years old (std. dev. = 0.85).

National origin was constructed by the CILS using the father’s birth country and mother’s birth country, as well as taking into consideration the respondent’s birth country. If a father’s birth country differed from the mother’s birth country, the mother’s national origin was assigned to the respondent. To simplify groups of comparison and

due to cultural similarities among certain countries, nationality was recoded as follows: Cuban, Mexican, and Other Latin American (created from the following categories: Nicaragua, Colombia, Dominican Republic, Central America, and South America), the West Indies (created from the following categories: Haiti, Jamaica, and the West Indies), Filipino, Vietnamese, and other Asian (created from the categories: Chinese, Laos, Cambodia, Hmong, and other Asia). As already mentioned, due to low sample size, respondents whose national origin was from the Middle East, Africa, Europe, or Canada were excluded. The largest category was respondents who reported a nationality from other Latin American countries (20.07%), followed by Filipino (18.99%) Cuban (16.84%), Mexican (13.87%), other Asian countries (13.00%), Vietnamese (9.02%), and the West Indies (8.22%),

Parental socioeconomic status (SES) was included as a measure of both educational attainment and economic resources of the parents. SES was created as part of the CILS dataset using a unit-weighted standardized scale of the father's and mother's education, occupational SEI scores, and family home ownership. SES was created for each respondent who had valid responses for at least three of the measures used to create the SES. Values ranged from -1.66 to 1.88, with an average SES value of -0.02 (std. dev. = 0.79).² Although SES was categorized under demographic variables, it would have

² For this study SES was chosen as a proxy for familial resources, largely due to a low missing n-value. Many education-related studies look directly at the education level of the father and mother. The CILS does ask the education level of parents in both the children's survey (t1, t2) and parental survey. However, even after taking into account other missing values that excluded some cases into the models used in this paper's analysis, an additional 268 cases for father's educational attainment (t1) and 217 additional missing cases for mother's educational attainment (t1) were missing from n = 1,485. Fewer cases were missing from the parental survey, however the question that asked about educational attainment was worded as, "What is the highest level of

also been appropriate to put SES under familial resources. While categorizing variables in this model is helpful for clarity, it is also a bit arbitrary. Therefore, variables used in this model should be viewed collectively, rather than as distinct and separate categories.

Child

Educational expectations from wave two were used in the models predicting educational attainment and high school GPA. Respondents' educational expectation was created as a binary variable from the question, "And realistically speaking, what is the highest level of education that you think you will get?" Responses were recoded as college graduate or more (1) or less than a college graduate (0). On average, the majority of the respondents during wave two reported having educational expectations of completing a college degree (84.46%).

An English language proficiency scale was created using factor analysis from the following questions: "How well do you speak English?", "How well do you understand English?", "How well do you read English?", and "How well do you write English?". Possible responses for each question ranged from not at all (1), not well (2), well (3), to very well (4). The English language proficiency scale from wave two was used for models predicting educational attainment and high school GPA ($\alpha = 0.924$). The scale ranged from 4 to 16, with an average score of 15.10 (std. dev. = 1.66).

Study time was created from the question, "During the typical weekday, how many hours do you spend studying or doing school homework?" Responses of less than one were recoded as 0.50 hours, one to two were recorded to 1.50 hours, two to three were recorded to 2.50 hours, three to four were recorded to 3.50 hours, four to five were

education that you completed?" Using this variable would not capture what the other parent's educational level was.

recorded to 4.50 hours, five or more were recorded to 5.50 hours. The average amount of time spent studying each weekday was 2.38 hours (std. dev. = 1.46).

High school GPA (wave two) ranged from 0.08 to 5.00, with an average value of 2.73 units (std. dev. = 0.92).³

School Experiences

Attending an inner-city school was created as a binary variable from type of school attended by the respondents. Researchers of the CILS assigned the respondents school type as either inner city (1) or suburban (0). Less than half of the respondents attended an inner-city school (33.40%).

A teacher quality scale was created using factor analysis from the responses of each of the following statements about the respondents' current school and teachers: the teaching is good, teachers are interested in students, students are graded fairly, and discipline is fair. The responses were reverse coded to: "disagree a lot" (1), "disagree a little" (2), "agree a little" (3), and "agree a lot" (4). The teacher quality scale had an alpha value of 0.742. Values ranged from 0 to 16, with an average teacher quality value of 11.67 (std. dev. = 2.80).

Friend Group

Friend group college plans was measured by the question, "How many of your friends have no plans to go to college?" Possible responses were recoded so that children who had friends with plans to go to college were coded as 1 ("none") and children with

³ A limitation to using high school GPA was that there was no question in the CILS that asked if the GPA was out of a 4.0, 5.0, or other scale. While lower values indicated poorer performance at school and higher values indicated better performance at school, it was not possible to determine this on a standardized scale.

friends who did not have college plans were coded as 0 (“some” or “many or most”). Overall, 44.04% of the respondents reported that all of their friends had plans to go to college.

Homework Help

Help with homework was created as a binary variable from the question, “Who helps you most with your homework when you need help?” Possible responses of “mother or father”, “brother or sister”, “friends, teachers”, “counselors”, “significant other”, “boy/girlfriend”, “in-law/fiancé’s parents”, and “other” were recorded as 1 and responses of “no one” were recorded as 0. The majority of respondents reported having access to homework help (68.08%). Homework help incorporated help received from various groups: family, friends, or school. Parents were also asked if they helped their child with homework, which could have been another possible variable for homework help. However, the more general question of “Who helps you most with your homework when you need help?” was chosen because the goal of this paper was not necessarily to limit which group helps the respondent. Rather, the objective was to see that several groups can help with homework and, in general, influence educational attainment.

Family

A school involvement scale was created from using the following three questions: “Do you and your spouse/partner belong to a parent-teacher organization?”, “Do you and your spouse/partner attend meetings of a parent-teacher organization?”, and “Do you and your spouse/partner act as a volunteer in the school?” Responses of “yes” were coded as 1, and responses of “no” were coded as 0. The school involvement scale had an alpha

value of 0.628. The average amount of involvement was 1.68 (std. dev. = 1.06) from a scale of zero to three.

A house rules scale was created from the following questions: “Are there family rules for your child about maintaining: a certain grade average, doing homework, household chores, and how many hours he/she may watch television overall?” Responses of “yes” were coded as 1, and responses of “no” were coded as 0. The house rules scale had an alpha value of 0.622. On a scale of zero to four, the average response for rules was 3.27 (std. dev. = 0.97).

A variable for parents’ educational expectations was created as a binary variable from the question, “How far in school do you expect your child to go?” Responses were recoded as college graduate or more (1) or less than a college graduate (0). On average, 77.51% of the parents had expectations for their children to graduate from college.

An intact family variable was measured by the question asked in wave two, “Which of the following best describes your present situation?” Responses of “father and mother” were coded as 1, and all other responses (father and step-mother/other adult female, mother and step-father/other adult male, father alone, mother alone, alternates between father and mother, other adult guardian, lives with spouse/significant other, lives alone, and other) were coded as 0. Close to three-fourths (73.33%) of the respondents reported living in an intact family.

Save money was a binary variable from the parental survey response to “Have you or your spouse/partner done anything specific in order to have some money for your child's education after high school?” Responses of “yes” were recoded as 1, and

responses of “no” were recorded as 0. Less than half (40.34%) of the parents reported having saved money for their children’s education after high school.

Dependent Variables

College graduate. Educational attainment was measured by college graduation for the first part of the analysis and high school GPA in the second part of the analysis. Having a college degree or greater was recoded as 1, and having less than a college degree was recoded as 0. Responses of other were coded as missing. Less than half of the respondents (28.89 %) included in the regression model reported having graduated college.

GPA. While high school GPA was used as an independent variable in the binary-logit regression predicting educational attainment, in the second part of this analysis, high school GPA (wave two) was the dependent variable using an OLS regression model.

Variables used in Post-Hoc Analysis

After educational models were run for college graduation and high school GPA, further analyses were conducted with friend influence and educational attainment. To capture the influence of friends on educational attainment, I first included the variable measuring if the child’s friends had plans for college. While looking at the CILS questionnaire, another measure of friends’ influence on educational outcomes was friends who dropped out of high school. I also included the influence of having friends who dropped out of high school in the models predicting college graduation and high school GPA. Participants were asked, “How many of your friends have dropped out of [high] school without graduating?” Responses of “some” and “many or most” were recorded as

1 and responses of “none” were recoded as 0. Participants reported that 44.71% had friends who dropped out of high school.

Friend Group

To further analyze the influence of friends who had college plans and who had dropped out of high school, a friend group typology was created. One group was children who had friends with college plans and no friends who dropped out of high school (37.04% of respondents). A second group was children who had friends with college plans and had friends who dropped out of high school (7.00% of respondents). The third group was children who did not have friends with college plans and no friends who dropped out of high school (18.25% of respondents). The fourth group was children who did not have friends with college plans and had friends who dropped out of high school (37.71% of respondents). Refer to Table 1 for an overview of the descriptive statistics for respondents in the CILS that are included in this study.

Completion and Attrition

Due to attrition in the CILS, mean comparisons for gender, age, nationality, SES, educational expectations, English proficiency, and GPA were conducted between children who completed all waves and the parental interview and children who dropped out at some point of the survey. The coding of these variables were the same as already explained, with minor changes. Educational expectations, English proficiency scale and GPA were asked in both waves one and two. English language proficiency scales from wave one and two had alpha scores of 0.919 ($n = 5,114$) and 0.919 ($n = 4,192$), respectively.

Table 1: Descriptive Statistics for Respondents in the CILS

Variables ^a	Mean (Percent %)	Range	Std. Dev.
Demographic (t1)			
Gender	47.00%	1 = male, 0 = female	
Age ^b	14.11	12 - 18 years old	0.85
Nationality			
Mexican	13.87%		
Cuban	16.84%		
Other Latin	20.07%		
West Indies	8.22%		
Filipino	18.99%		
Vietnamese	9.02%		
Other Asian	13.00%		
SES	-0.02	-1.66 – 1.88	0.79
Child (t2)			
Educ expectations	84.46%		
English proficiency	15.10	4 - 16	1.66
Hours of study	2.38	0.50 - 5.50	1.46
HS GPA	2.73	0.08 - 5.00	0.92
School experiences			
Inner-city (t1)	33.40%		
Teacher (t2)	11.67	0 - 16	2.80
Friend group (t2)			
College plans	44.04%		
Drop-out	44.71%		
Combined friend group (t2)			
College plans/No drop-outs	37.04%		
College plans/Drop-outs	7.00%		
No college plans/No drop-outs	18.25%		
No college plans/Drop-outs	37.71%		
Homework help (t2)	68.08%		
Parents (p)			
Involvement	1.68	0 - 3	1.06
Rules	3.27	0 - 4	0.97
Parent exp	77.51%		
Intact family	73.33%		
Save money	40.34%		
College Grad (t3)	28.89%	1 = yes, 0 = no	
n	1,485		

Data: Children of Immigrants Longitudinal Study (CILS)

^at1, t2, and t3 denotes which wave; p denotes from parental survey^bThe age variable used is from wave one, on average 3.5 years is added to see age at wave two and 10 years is added to see age at wave three

Analyses

To analyze college graduation, I conducted a binary-logit regression where demographic, child, school, friend group, and family variables were included to predict college graduation (Table 2). I proceeded to conduct an OLS regression where the dependent variable was high school GPA (Table 3).

After these two initial regressions, I further analyzed the influence of competing friend groups as measured by friends who had college plans and friends who dropped out of high school. I included friends who dropped out of high school as a measure of friend group in Model 3 and included both friends who had college plans and friends who dropped out from high school in Model 4 for the binary-logit predicting college graduation (Table 2) and the OLS regression predicting high school GPA (Table 3). The goal was first to see if friends who dropped out of high school significantly predicted either college graduation or high school GPA. In Model 4, the goal was to see how both friends who had college plans and who dropped out of high school predicted college graduation or high school GPA when both variables were included at the same time (Tables 2 and Table 3, respectively). Further analyses were conducted on friend influence, by using a friend group typology. A chi-square test was conducted between college graduation and the combined friend groups (Table 4), and an ANOVA test was conducted between high school GPA and the combined friend groups (Table 5). A binary-logit regression predicting college graduation and an OLS regression predicting high school GPA were conducted similar to those in Table 2 and Table 3; however, friends' influence now included the combined friend group typology (Table 6 and Table 7).

Finally, t-tests were conducted between the means of demographic and educational variables across waves one, two and three, and the parental interview to address how the sample size included in my models may differ from the initial sample size due to attrition (Table 8).

CHAPTER THREE

Results

College Graduation¹

Refer to Table 2 to see variables that significantly predict college graduation. Model 1 includes children variables and Model 2 includes parental variables.

The main difference seen between the two models in Table 2 is that there is no significant difference for respondents who are Filipino in comparison to respondents who are Mexican in Model 1. However, there is a difference between respondents who are Filipino and Mexican seen in Model 2.

Demographic

Considering that Model 2 is similar to Model 1, and includes all of the variables of interest, the results will be reported for Model 2. With respect to nationality, respondents who are Cuban, from other Latin American countries, and the West Indies all have higher graduation rates than those who are Mexican (an odds increase by a factor of 2.291, 2.166, and 2.511, respectively). Respondents who are Filipino have lower graduation rates than who are Mexican (a change in odds by a factor of 0.517).

After controlling for all other variables, SES values also significantly affect college graduation rates. For each unit increase in a respondent's SES, the odds of college graduation increase by a factor of 1.779. Stated another way, for each unit increase in SES, the odds of college graduation increase by 77.9%.

¹ Unless, noted, only variables of statistical significance will be reported in the results section.

Child

With respect to children variables, child expectations significantly affect college graduation rates. Respondents who have an educational expectation of completing college have an odds increase of actually completing college by a factor of 3.461 as compared to respondents who do not have educational expectations of completing college (odds increase by 246.1%). Hours of study also have a positive relationship with college graduation. For each additional hour of studying in high school, the odds of completing college increase by a factor of 1.216 (odds increase by 21.6%). Additionally, for each unit increase in respondents' high school GPA, the odds of completing college increase by a factor of 4.712 (odds increase by 371.2%).

Friend Group

Respondents' friends who have college plans also significantly predicts college graduation. Respondents who have friends with college plans have an odds increase to graduation from college by a factor of 1.604 (odds increase by 60.4%).

Family

Of all the variables included as parental influences, the one variable that significantly predicts college graduation is family rules. Each unit increase in family rules corresponds with an odds decrease of college graduation by a factor of 0.812 (odds decrease by 18.8%).²

² Additional analyses were conducted where only one component of family rules was included at a time. In these additional analyses grade rule, homework rule, chore rule, and television rule were binary variables. Grade rule and homework rule are not significant in predicting college graduation. However, chore rule and television rule predict ($p < 0.05$) a decrease in college graduation.

Overall, 47.2% of the variance in college graduation rates is explained by using Model 2. Looking at the standardized estimates, high school GPA followed by SES, child expectations, Cuban, Other Latin, hours of study, Filipino, the West Indies, friend group college plans, and family rules are the strongest predicting variables for college graduation ($\beta = 0.782$, $\beta = 0.251$, $\beta = 0.247$, $\beta = 0.171$, $\beta = 0.171$, $\beta = 0.157$, $\beta = -0.143$, $\beta = 0.139$, $\beta = 0.129$, $\beta = -0.111$, respectively). Refer to Table 2 for a more complete summary of the models used to predict college graduation.

High School GPA

Similar to the design used to predict college graduation, the OLS regression predicting high school GPA focuses on the first two models: Model 1 includes variables using the children's responses and Model 2 includes parental variables (refer to Table 3).

Between Models 1 and 2, only two variables change in significance. In Model 1, respondents who are Filipino in comparison to those who are Mexican are predicted to have a higher GPA by 0.175 units. However, in Model 2 there are no significant differences in GPA values between those who are Filipino and those who are Mexican. The other difference is that in Model 1 respondents who are from the West Indies compared those who are Mexican do not significantly predict GPA. However, in Model 2, respondents who are from the West Indies compared to those who are Mexican are likely to have lower GPA.

Demographic

The following results will now focus on Model 2. Respondents who are male compared to those who are female are on average to have a lower GPA by 0.265 units.

Table 2: Binary-Logit Regression Predicting College Graduation

Variables	Model One			Model Two			Model Three			Model Four		
	Est	e ^b	Std. Est	Est	e ^b	Std. Est	Est	e ^b	Std. Est	Est	e ^b	Std. Est
Intercept	-7.849***			-7.563***			-7.534***			-7.496***		
Demographic												
Gender (male = 1)	0.007	1.007	0.002	0.008	1.008	0.002	-0.023	0.977	-0.006	-0.011	0.989	-0.003
Age	-0.092	0.912	-0.043	-0.080	0.923	-0.037	-0.065	0.938	-0.030	-0.072	0.931	-0.034
N ationality ^a												
C uban	0.875**	2.400	0.181	0.829*	2.291	0.171	0.902**	2.464	0.186	0.844*	2.325	0.174
O ther Latin	0.691*	1.995	0.153	0.773*	2.166	0.171	0.875**	2.399	0.193	0.818*	2.267	0.181
W est Indies	0.839*	2.314	0.127	0.921*	2.511	0.139	0.938*	2.554	0.142	0.916*	2.500	0.139
F ilipino	-0.529	0.589	-0.115	-0.659*	0.517	-0.143	-0.588	0.555	-0.127	-0.633	0.531	-0.137
V ietnamese	0.621	1.861	0.098	0.697	2.007	0.110	0.808*	2.243	0.128	0.732*	2.080	0.116
O ther Asian	0.076	1.079	0.014	0.077	1.080	0.014	0.134	1.143	0.025	0.093	1.097	0.017
S ES	0.627***	1.872	0.274	0.576***	1.779	0.251	0.569***	1.766	0.248	0.566***	1.761	0.247
Child												
E duc expectations	1.251**	3.494	0.249	1.242**	3.461	0.247	1.264**	3.540	0.251	1.233**	3.432	0.245
E nglish proficiency	0.082	1.085	0.075	0.079	1.083	0.073	0.085	1.089	0.078	0.082	1.086	0.076
H ours of study	0.190***	1.209	0.152	0.196***	1.216	0.157	0.190***	1.209	0.153	0.190***	1.209	0.153
H S GPA	1.586***	4.881	0.800	1.550***	4.712	0.782	1.535***	4.639	0.774	1.534***	4.637	0.774
School experiences												
I nner-city	-0.244	0.784	-0.063	-0.244	0.784	-0.063	-0.257	0.773	-0.067	-0.242	0.785	-0.063
T eacher	0.003	1.003	0.005	0.000	1.000	0.000	0.004	1.004	0.006	0.000	1.000	0.000
F riend Group												
C ollege plans	0.489***	1.631	0.134	0.472**	1.604	0.129				0.335*	1.398	0.092
D rop-out							-0.458***	0.633	-0.125	-0.285	0.752	-0.078
H omework help	0.089	1.093	0.023	0.077	1.080	0.020	0.073	1.075	0.019	0.070	1.072	0.018
F amily												
I nvolve ment				0.114	1.121	0.067	0.125	1.133	0.073	0.117	1.124	0.069
R ule				-0.208**	0.812	-0.111	-0.208**	0.812	-0.111	-0.205**	0.814	-0.109
P arent expectations				0.170	1.185	0.039	0.170	1.185	0.039	0.174	1.190	0.040
I ntact family				-0.002	0.998	-0.001	0.017	1.017	0.004	0.005	1.005	0.001
S ave money				0.152	1.164	0.041	0.150	1.162	0.041	0.151	1.163	0.041
R ²	0.465			0.472			0.471			0.473		
n	1,485			1,485			1,485			1,485		

Source: CILS

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$ ^aReference group is Mexican

For every year increase in age, respondents are predicted to have a higher high school GPA by 0.049 units. With respect to nationality, those who are Cuban, from other Latin American countries, and the West Indies are all predicted to have a lower GPA than those who are Mexican (a decrease in GPA by 0.231 units, 0.185 units, and 0.186 units, respectively). However, respondents who are Vietnamese or from other Asian countries are expected have a higher GPA value by 0.563 units and 0.466 units, respectively, compared to those who are Mexican. For each unit increase in SES values, there is an expected increase in high school GPA by 0.104 units.

Child

For respondents who have expectations of being a college graduate, compared to those that do not, there is an expected increase in GPA by 0.459 units. For each unit increase in time spent studying, there is an expected increase in GPA by 0.105 units.

School Experiences

For each unit increase in teacher quality, there is an expected increase in GPA by 0.020 units.

Friend Group

When respondents who have friends with college plans, compared to respondents who have friends without college plans, there is an expected increase in the respondents' GPA by 0.165 units.

Family

In reference to parental variables, for each unit increase in family rules, there is an expected decrease in GPA by 0.048 units. Additionally, when parents have expectations

for their children to be college graduates, there is an expected increase in GPA by 0.223 units. If parents report that they save money for their children's educational plans, there is an expected increase in GPA by 0.121 units.³

Overall, a total of 31.2% of the variance in high school GPA is explained in Model 2. Looking at the standardized estimates of variables included in the model, child educational expectations followed by Vietnamese, other Asian, hours of study, gender, and parent expectations are the six most predictive variables for high school GPA ($\beta = 0.181$, $\beta = 0.176$, $\beta = 0.171$, $\beta = 0.167$, $\beta = -0.145$, and $\beta = 0.102$, respectively). Refer to Table 3 for a more complete summary of the models used to predict high school GPA.

Friends who Drop Out of High School

Referring to Table 2, Model 3 includes friend drop-outs. Respondents who have friends who drop out of high school as compared to respondents who do not have friends who drop out have an odds decrease in graduating college by 0.633 (odds decrease by 36.7%). In Model 4, both friends' college plans and friend drop-outs are included, only friends with college plans significantly predict college graduation. In Model 4, respondents who have friends with college plans as compared to respondents who have friends without college plans have an odds increase by 39.8% to graduate from college. Looking between Models 2 through 4, friends with college plans mediate friends who drop out of high school.

³ As with predicting college graduation, additional analyses were conducted where only one component of family rules was included at a time when predicting high school GPA. Separately, grade rule, homework rule, chore rule, and television rule are not significant in predicting college graduation.

Table 3: OLS Regression Predicting High School GPA

Variables	Model One			Model Two			Model Three			Model Four		
	Est	Std. Error	Std. Est	Est	Std. Error	Std. Est	Est	Std. Error	Std. Est	Est	Std. Error	Std. Est
Intercept	0.773	0.437		0.679	0.444		0.801	0.442		0.803	0.442	
Demographic												
Gender (male = 1)	-0.264***	0.041	-0.144	-0.265***	0.041	-0.145	-0.283***	0.041	-0.154	-0.280***	0.041	-0.152
Age	0.044	0.025	0.041	0.049*	0.024	0.045	0.052*	0.024	0.049	0.051*	0.024	0.047
Nationality ^a												
Cuban	-0.200*	0.079	-0.082	-0.231**	0.080	-0.095	-0.214**	0.079	-0.088	-0.223**	0.079	-0.091
Other Latin	-0.197**	0.075	-0.086	-0.185*	0.075	-0.081	-0.144	0.075	-0.063	-0.153*	0.075	-0.067
West Indies	-0.180	0.092	-0.054	-0.186*	0.094	-0.056	-0.190*	0.093	-0.057	-0.192*	0.093	-0.058
Filipino	0.175*	0.079	0.075	0.074	0.080	0.032	0.090	0.080	0.039	0.085	0.080	0.036
Vietnamese	0.618***	0.089	0.193	0.563***	0.090	0.176	0.581***	0.089	0.182	0.572***	0.090	0.179
Other Asian	0.502***	0.079	0.184	0.466***	0.079	0.171	0.464***	0.078	0.170	0.460***	0.078	0.169
SES	0.148***	0.033	0.128	0.104***	0.033	0.090	0.097**	0.033	0.084	0.097**	0.033	0.084
Child												
Educ expectations	0.512***	0.060	0.202	0.459***	0.061	0.181	0.453***	0.060	0.178	0.446***	0.060	0.176
English proficiency	0.023	0.014	0.042	0.023	0.014	0.042	0.025	0.014	0.044	0.024	0.014	0.044
Hours of study	0.109***	0.015	0.173	0.105***	0.015	0.167	0.100***	0.015	0.159	0.099***	0.015	0.158
School experiences												
Inner-city	-0.070	0.051	-0.036	-0.046	0.051	-0.024	-0.043	0.050	-0.022	-0.040	0.050	-0.020
Teacher	0.021**	0.007	0.065	0.020**	0.007	0.060	0.019**	0.007	0.058	0.018*	0.007	0.055
Friend Group												
College plans	0.176***	0.042	0.095	0.165***	0.042	0.089				0.065	0.048	0.036
Drop-out							-0.235***	0.042	-0.128	-0.203***	0.047	-0.111
Homework help	0.070	0.044	0.036	0.063	0.044	0.032	0.064	0.043	0.033	0.062	0.043	0.032
Family												
Involvement				0.025	0.021	0.029	0.028	0.020	0.032	0.027	0.021	0.031
Rule				-0.048*	0.022	-0.051	-0.050*	0.022	-0.053	-0.049*	0.022	-0.052
Parent expectations				0.223***	0.054	0.102	0.223***	0.053	0.102	0.223***	0.053	0.102
Intact family				0.039	0.047	0.019	0.044	0.047	0.021	0.040	0.047	0.019
Save money				0.121**	0.046	0.065	0.119**	0.045	0.064	0.119**	0.045	0.064
R ²	0.296			0.312			0.320			0.321		
n	1,485			1,485			1,485			1,485		

Source: CILS

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p < 0.05$ ^aReference group is Mexican

Referring to Table 3, Model 3 includes friends who drop out of high school. Respondents who have friends who drop out of high school as compared to respondents who do not have friends who drop out are predicted to have a lower GPA by 0.235 units. In Model 4, where both friends' college plans and friends' drop-outs are included, friends who have college plans do not significantly predict GPA while friends who drop out do. In Model 4, respondents who have friends who drop out of high school as compared with respondents who have friends who do not drop out of high school are predicted to have a lower GPA by 0.203 units. Looking between Models 2 through 4, friends who drop out of high school mediate friends who have college plans.

Combined Friend Group Influence

In reference to Table 4, there is a difference in the distribution between friend group (friends with college plans/no drop-outs, friends with college plans/with drop-outs, friends without college plans/no drop-outs, and friends without college plans/with drop-outs) and college graduate (yes or no). Of the respondents who are college graduates, the largest number of these respondents have friends with college plans/no drop-outs ($n = 232$), followed by friends without college plans/with drop-outs ($n = 88$), friends without college plans/no drop-outs ($n = 77$), and friends with college plans/with drop-outs ($n = 32$). Of the respondents who do not graduate from college, the largest number of these respondents have friends without college plans/with drop-outs ($n = 472$), followed by friends with college plans/no drop-outs ($n = 318$), friends without college plans/no drop-outs ($n = 194$), and friends with college plans/with drop-outs ($n = 72$).

Table 4: Chi-Square Distribution Between College-Graduation Rates by Friends' College Plans & Drop-out

College Graduate	Friends with College Plans/ No Drop-outs		Friends with College Plans/ With Drop-outs		Friends without College Plans/No Drop-outs		Friends without College Plans/With Drop-outs		Total	
	n	%	n	%	n	%	n	%	n	%
No	318	21.41%	72	4.85%	194	13.06%	472	31.78%	1,056	71.11%
Yes	232	15.62%	32	2.15%	77	5.19%	88	5.93%	429	28.89%
Total	550	37.04%	104	7.00%	271	18.25%	560	37.71%	1,485	100.00%

Source: CILS

$\chi^2 = 94.832, p < 0.001$

* $p < 0.05$

Referring to the results of an ANOVA in Table 5, there are differences between means in GPA and combined friend groups (refer to Table 5). Respondents who have friends with college plans/no drop-outs have a higher GPA than respondents who have friends with college plans/with drop-outs by 0.585 units. Respondents who have friends with college plans/no drop-outs have a higher GPA than respondents who have friends without college plans/no drop-outs by 0.405 units. Respondents who have friends with college plans/no drop-outs have a higher GPA than respondents who have friends without college plans/with drop-outs by 0.680 units. Respondents who have friends without college plans/no drop-outs have a higher GPA than respondents who have friends without college plans/with drop-outs by 0.493 units.

Table 5: Difference Between Means in GPA
by Friends' College Plans & Drop-outs

Friend Group	Difference Between GPA Means
1 to 2	0.585*
1 to 3	0.405*
1 to 4	0.680*
2 to 3	-0.099
2 to 4	0.211
3 to 4	0.493*

Source: CILS

n = 1,485; F = 33.47, $p < 0.001$

* $p < 0.05$

1 = Friends with College Plans, No Friend Drop-outs

2 = Friends with College Plans, With Friend Drop-outs

3 = Friends without College Plans, No Friend Drop-outs

4 = Friends Without College Plans, With Friend Drop-outs

A binary-logit regression, which includes friend group variables, was conducted predicting college graduation (refer to Table 6). While controlling for demographic,

school, and family influences, friend group differences significantly predict college graduation. Referring to Model 2, respondents who have friends with college plans/no drop-outs have an odds increase by 1.915 for graduating from college as compared to respondents who have friends with no college plans/drop-outs (odds increase by 91.5%). Respondents who have friends with college plans/with drop-outs have an odds increase by 2.076 for graduating from college as compared to respondents who have friends with no college plans/with drop-outs (odds increase by 107.6%). Respondents who have friends with no college plans/no drop-outs have an odds increase by 1.652 for graduating from college as compared to respondents with friends with no college plans/with drop-outs (odds increase by 65.2%). There are other variables that predict college graduation that are used in this model, but considering that these results are similar to previous models predicting college graduation, a detailed description of these results will be omitted.

An OLS regression, which includes combined friend group variables, was also conducted to predict high school GPA (refer to Table 7). While controlling for demographic, school, and family influences, friend group differences significantly predict high school GPA. Referring to Model 2, respondents who have friends with college plans/no drop-outs are predicted to have a higher GPA by 0.269 units as compared to respondents who have friends with no college plans/with drop-outs. Respondents who have friends with no college plans/no drop-outs are predicted to have a higher GPA by 0.213 units as compared to respondents who have friends with no college plans/with drop-outs. Since these results of other variables are similar to previous models predicting college graduation, a detailed description of these results will be omitted.

Table 6: Binary-Logit Regression Predicting College Graduation

Variables	Model One			Model Two		
	Est	e ^b	Std. Est	Est	e ^b	Std. Est
Intercept	-8.159***			-7.895***		
Demographic						
Gender (male = 1)	-0.010	0.990	-0.003	-0.009	0.991	-0.003
Age	-0.086	0.918	-0.040	-0.073	0.930	-0.034
Nationality ^a						
Cuban	0.924**	2.518	0.191	0.875**	2.399	0.181
Other Latin	0.776*	2.172	0.171	0.855**	2.351	0.189
West Indies	0.875*	2.399	0.133	0.953*	2.594	0.144
Filipino	-0.467	0.627	-0.101	-0.599	0.549	-0.130
Vietnamese	0.691*	1.995	0.109	0.771*	2.161	0.122
Other Asian	0.116	1.123	0.022	0.117	1.124	0.022
SES	0.629***	1.875	0.274	0.575***	1.778	0.251
Child						
Educ expectations	1.262**	3.531	0.251	1.250**	3.489	0.249
English proficiency	0.084	1.088	0.077	0.081	1.085	0.075
Hours of study	0.186***	1.204	0.149	0.191***	1.211	0.154
HS GPA	1.574***	4.826	0.794	1.538***	4.655	0.776
School experiences						
Inner-city	-0.226	0.798	-0.059	-0.226	0.798	-0.059
Teacher	0.001	1.001	0.001	-0.002	0.998	-0.004
Combined friend group ^b						
College plans/No drop-outs	0.667***	1.948	0.178	0.650***	1.915	0.173
College plans/Drop-outs	0.745**	2.106	0.105	0.730*	2.076	0.103
No college plans/No drop-outs	0.497*	1.644	0.106	0.502*	1.652	0.107
Homework help	0.094	1.099	0.024	0.081	1.084	0.021
Family						
Involvement				0.121	1.129	0.071
Rule				-0.204**	0.816	-0.109
Parent expectations				0.168	1.183	0.039
Intact family				0.002	1.002	0.001
Save money				0.156	1.168	0.042
R ²	0.468			0.475		
n	1,485			1,485		

Source: CILS

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p < 0.05$ ^aReference group is Mexican^bReference group is No college plans/Drop-outs

Table 7: OLS Regression Predicting High School GPA

Variables	Model One			Model Two		
	Est	Std. Error	Std. Est	Est	Std. Error	Std. Est
Intercept	0.694	0.436		0.599	0.441	
Demographic						
Gender (male = 1)	-0.278***	0.041	-0.152	-0.280***	0.041	-0.153
Age	0.046	0.024	0.043	0.051*	0.024	0.047
Nationality ^a						
Cuban	-0.190*	0.079	-0.078	-0.222**	0.079	-0.091
Other Latin	-0.165*	0.075	-0.072	-0.152*	0.075	-0.067
West Indies	-0.187*	0.092	-0.056	-0.192*	0.093	-0.058
Filipino	0.187*	0.079	0.080	0.086	0.080	0.037
Vietnamese	0.627***	0.088	0.196	0.573***	0.090	0.180
Other Asian	0.496***	0.079	0.182	0.460***	0.078	0.169
SES	0.140***	0.033	0.121	0.097**	0.033	0.084
Child						
Educ expectations	0.499***	0.060	0.196	0.446***	0.061	0.176
English proficiency	0.024	0.014	0.044	0.024	0.014	0.044
Hours of study	0.103***	0.015	0.165	0.099***	0.015	0.158
School experiences						
Inner-city	-0.063	0.051	-0.033	-0.039	0.050	-0.020
Teacher	0.020**	0.007	0.061	0.018*	0.007	0.055
Combined friend group ^b						
College plans/No drop-outs	0.280***	0.049	0.148	0.269***	0.048	0.142
College plans/Drop-outs	0.096	0.083	0.027	0.084	0.082	0.024
No college plans/No drop-outs	0.211***	0.058	0.089	0.213***	0.057	0.090
Homework help	0.069	0.044	0.035	0.062	0.043	0.032
Family						
Involvement				0.027	0.021	0.031
Rule				-0.049*	0.022	-0.052
Parent expectations				0.222***	0.053	0.101
Intact family				0.040	0.047	0.019
Save money				0.119**	0.045	0.064
R ²	0.304			0.321		
n	1,485			1,485		

Source: CILS

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p < 0.05$ ^aReference group is Mexican^bReference group is No college plans/Drop-outs

Completion/Attrition

When comparing differences in respondents by completion and attrition, significant differences ($p < 0.05$) in means by gender, SES, age, nationality, educational expectations, English proficiency, and GPA exist (Refer to Table 8). From wave one to wave three, the male/female ratio decreases from 48.91% to 45.87%, and the average SES value increases from -0.075 to 0.009. Overall age also decreases by wave three; respondents who completed all waves are 24.161 years old as compared to 24.365 years old for the respondents who did not complete all three waves.

Additionally, differences by nationality also exist. From wave one to wave three, the percentage of respondents who are Cuban increases from 23.87% to 24.93%, the percentage of respondents who are Mexican decreases from 14.70% to 13.03%, the percentage of respondents who are from the West Indies decreases from 8.76% to 7.87%, the percentage of respondents who are Filipino increases from 15.95% to 18.23%, and the percentage of respondents who are Vietnamese decreases from 7.20% to 6.15%,. However, larger nationality differences exist with those respondents whose parents completed the interview. While 23.87% who completed wave one are Cubans, they represent 16.50% of those whose parents completed the interview. While 7.20% who completed wave one are Vietnamese, they represent 10.43% of those whose parents completed the interview. While 9.25% respondents completed wave one are from another Asian country, they represent 14.30% of those whose parents completed the interview.

With respect to education variables, respondents who completed all waves tend to report higher educational expectations, English proficiency scores, and GPA. I will further discuss the implications of completion in the discussion section.

The average educational expectations recorded in wave one is 42.36% for respondents completed wave two compared to 37.50% of respondents who did not complete wave two. The average educational expectations in wave two is 85.42% for respondents who completed wave three compared to 74.18% for those who did not complete wave three.

The average English proficiency score in wave one is 14.853 points out of 16 for those who completed wave two compared to 14.647 for respondents who did not complete wave two. The average English proficiency score in wave two is 15.196 points for those who completed wave three compared to 14.731 for respondents who did not complete wave three.

The average GPA in wave one is 2.608 for respondents who completed wave two compared to 2.084 for those who did not complete wave two. The average GPA in wave two is 2.601 for respondents who completed wave three compared to 2.201 for those who did not complete wave three.

Table 8: Mean Demographics By Completed and Attrition with CILS

Variables ^a	Wave One		Wave Two		Wave Three		Parental Interview	
	Completed	n	Completed	Attrition	n Completed/Attrition	n Complete/Attrition	Completed	Attrition
Gender (male = 1) (t1)	48.91%	5,136	48.27%	51.76%	4,199/937	54.17%*** 3,253/1,883	50.46%	47.55%*
Age ^b	14.236	5,135	17.694	17.924**	4,198/937	24.161	17.692	17.974***
Nationality (t1)								
Cuban	23.87%	5,136	23.05%	27.73%*	4,199/937	22.04%*	16.50%	30.37%***
Mexican	14.70%	5,136	14.27%	16.65%	4,199/937	17.58%*** 3,253/1,883	14.17%	15.16%
Other Latin	20.27%	5,136	19.62%	23.16**	4,199/937	19.86%	20.07%	20.44%
West Indies	8.76%	5,136	8.00%	12.17***	4,199/937	10.30%*	8.98%	8.57%
Filipino	15.95%	5,136	17.24%	10.14***	4,199/937	12.00%*** 3,253/1,883	15.54%	16.30%
Vietnamese	7.20%	5,136	7.38%	6.40%	4,199/937	9.03%*** 3,253/1,883	10.43%	4.36%***
Other Asian	9.25%	5,136	10.43%	3.95***	4,199/937	9.19%	14.30%	4.80%***
SES (t1)	-0.075	5,136	-0.053	-0.176***	4,199/937	-0.220*** 3,253/1,883	-0.099	-0.054***
Educational expectations (t1)	41.48%	5,104	42.36%	37.50%*	4,176/928	85.42%	42.37%	40.69%***
Educational expectations (t2)						74.18%*** 2,935/1,247	14.707	14.91***
English proficiency (t1)	14.815	5,114	14.853	14.647**	4,184/930	15.196	14.731*** 2,938/1,254	2.395/2,719
English proficiency (t2)							2.662	2.385
GPA (t1)	2.516	5,040	2.608	2.084***	4,149/891	2.601	2.662	2.375/2,665
GPA (t2)						2.601	2.201*** 3,199/1,841	

Data: CILS

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p < 0.05$; t-tests conducted by attrition and completed for wave two, wave three, and parental interview^at1, t2, and t3 denotes which wave; p denotes from parental survey^bThe age variable used is from wave one, the means reported here have added 3.5 years for wave two, 10 years for wave three, and 3.5 years for parental interview to help see time progression

CHAPTER FOUR

Discussion and Conclusions

My original hypothesis that parental, teacher and friend resources, as well as children's expectations and efforts, predicts educational attainment is supported in this paper, with some qualifications. Significant factors predicting college graduation include nationality, SES, child expectations, hours of studying, high school GPA, and friend group influences. Overall, these results which predict educational attainment support propositions of segmented assimilation theory and Lee's (1991) sociocultural interactive model. Specific to segmented assimilation theory, the results support that human, social, and cultural capital all influence whether immigrants are more likely to experience upward assimilation, as defined by high levels of educational attainment. In terminology used by Lee (1991), the CILS provides support that interrelated factors of the host society, cultural background, and historical context. Moreover, the interaction among children, parents, teachers and friend groups should be considered when looking at what influences educational attainment in minority populations.

As a single indicator, high school GPA is a strong predictor of college graduation, for every unit increase in high school GPA it is predicted that the odds of college graduation increase by 363.7% (refer to Table 2; model 4). Bowen et al. (2009) argue that GPA is an even better indicator of college graduation than SAT/ACT scores. For college admissions, this single number can provide valuable information for admitting students with a high potential of actually graduating college. However, GPA as a variable used in predicting college graduation provides relatively little valuable

information from an educational policy or parenting point of view. Predictors of high school GPA (as described in Tables 3 and 7) can provide greater insight on earlier practices that can eventually lead to a higher probability of college graduation. For example, it is important that parents share their expectations with their children, even if the children independently express a desire to go to college.

Subsequently, high school GPA was analyzed as the dependent variable. Again, SES, child expectations, hours of study, and friend group influences significantly predict high school GPA. Other factors, such as gender, age, teacher quality, rules, parent expectations, and parents saving for future education all predict high school GPA. These results provide further support of segmented assimilation theory and Lee's (1991) sociocultural interactive model. By looking at variables which predict college graduation and high school GPA, educational attainment can be interpreted as a more holistic approach of the multiple areas influence including: children's own expectations and efforts and outside resources from family, friends, and teachers are significant .

Using the CILS data allows for comparisons between competing friend groups and their influence on educational outcomes. When looking at college graduation, having the presence of positive influences (friends with college plans) has a greater influence than the presence of negative influences (friends who drop out of high school). However, this relationship is reversed when looking at high school GPA. Negative friend influences have a stronger effect on predicting high school GPA than positive friend groups. Additionally, when looking at friend group combinations of friends who have college plans and who drop out of high school, individuals who have any friend group combinations are more likely to be college graduates than individuals who have a friend

group combination of friends with no college plans and friends who drop out of high school. When looking at high school GPA, respondents who have friend group combinations of friends with college plans/with drop-outs and friends without college plans/no drop-outs are more likely to have a higher GPA than individuals who have friends with no college plans/no drop-outs. It seems that the presence of positive friend groups and/or the absence of negative friend groups contribute to college graduation and higher GPA than the presence of negative friend groups.

While the results overall support what the theoretical evidence would predict, due to attrition rates, the demographic composition of the CILS sample may not reflect the true immigrant population in the U.S. Over time, respondents have higher rates of completion among females, those who are younger in age, and those who have higher SES values. Differences among nationalities between attrition and completion rates also exist, especially in completed parental interviews. For example, parents whose children identified as Cuban, Vietnamese, and Chinese, or from another Asian country were less likely to complete the survey. When comparing educational measures over time, respondents who completed the CILS through wave three are more likely to have higher educational expectations and a higher GPA. Similarly, Portes and Rumbaut (2005) conclude that differences in age, family composition, and academic indicators exist between those that completed all waves of the CILS and those that did not. Moreover, Portes and Rumbaut (2005: 991) summarize the make-up of respondents who completed the parental interview as a “rather stable and settled adult population”. Therefore, this study acknowledges that the results are likely to over-represent immigrants with higher levels of human capital and resources. However, since the CILS is still the most

comprehensive dataset available that has information about second generation immigrants, these results are still valuable.

In terms of educational policy, several behaviors are likely to increase educational attainment. Specific to models looking at high school GPA, even after child's educational expectations are controlled for, parent's educational expectations have a positive effect on high school GPA. Even if a child has high expectations for themselves, it is important for parents to still encourage and support their child's educational attainment. With regards to competing friend groups, it may be unreasonable and even undesirable to forbid friend group interaction with friends who either have no college plans or drop out of high school. However, having the presence of friends who have college plans, even with a combination of other friend groups, could reduce the risk of children attaining a lower level of education.

Limitations

While this paper contributes to education and immigrant research, there are several limitations. As already noted throughout the paper, attrition and nonresponse limit the generalizability of this study due to concerns about whether the completed sample accurately reflects the immigrant population in the United States. Additionally, there is an unequal distribution of college graduates, with only 28.89% of the sample having graduated from college. It would have been more ideal if the survey included a more equal distribution between respondents who graduated from college and those who did not. A second concern is the variables used in the educational attainment models. Independent measures such as household income, fathers' education level, and mothers' education level were not used due to high nonresponse rates. However, parents'

economic and educational backgrounds are important variables to account for children's educational outcomes, and are accounted for in this paper by a single SES variable. With reference to questions asked on the CILS about GPA, the study does not report GPA on a standardized scale. Therefore, I was not able to create a standardized GPA for children whose schools used a GPA scale that was not out of 4.0. Additionally, a family rule scale was chosen instead of using a single family rule. As noted before, the family rule scale predicts lower educational outcomes, whereas use of a single family rule does not offer strong evidence that family rules predict lower educational outcomes. In the end, I chose to use a family rule scale while still noting the option of using a single family rule. Depending on how family rule variables are constructed, the influence of family rules varies as a predictor of educational outcomes. A third concern could be variables, such as citizenship status, that were not accounted for in the models and which might affect educational attainment. The CILS does ask, "Are you a U.S. Citizen?" However due to concerns of nonresponse and the likelihood of social desirability effect bias, this variable was not included in my model.

Future Research

While the CILS greatly adds to data on immigrants in the U.S., future research in immigration studies could be improved with additional comprehensive surveys that include intergenerational data.

With respect to family rules actually predicting lower high school GPA, other data sets should be compared to the CILS to see if this result is unique to the CILS. Additionally, further research could be done to see if the scale of family rules is a proxy for other family structures, such as parenting and power structures. For example, the

increase in family rules over grades, homework, chores, and television could be measuring the likelihood of authoritarian parenting (Baumrind, 1967; Darling & Steinberg, 1993).

More research needs to look at the influence of peer groups and how children negotiate competing peer groups. This paper provides evidence that competing friend groups matter in predicting educational outcomes and their influences are complex (such as having differing degrees of impact for predicting college graduation and high school GPA). Although this study provides evidence that competing friend groups influence educational outcomes, the sample reflects second generation immigrants. Further research could use similar analyses using other data sets which include other populations, such as children who are not classified as immigrants.

Another specific avenue could be to see how competing peer groups also influence educational motivation and engagement. With future studies looking at the role and influence of competing friend groups, other friend groups and environment variables should be taken into account. For example, Clasen and Brown (1985) studied a group of middle school to high school students and found that the degree of perceived pressure differed by issue (such as peer involvement versus rule violations) and by type of peer group (e.g. popular/athletic group versus drug/tough group). With regards to educational achievement, peer groups may not have as much influence with children who do not largely value education in the first place (Ryan, 2000).

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